In the Claims

1. (cancelled)

2. (currently amended) The method of claim ~~1~~ 30 wherein said radiation is selected from the group consisting of a lethal dose of ionizing radiation, a sub-lethal dose of ionizing radiation and a chronic low-dose of ionizing radiation.

3. (original) The method of claim 2 wherein said radiation is selected from the group consisting of diagnostic X-rays, radiation therapy in cancer treatment, CAT-scans, mammograms, radionuclide scans, interventional radiological procedures under CT or fluoroscopy guidance, tissue-incorporated radionuclides from ingestion of contaminated food or water, and uncontrolled exposure to ionizing radiation from nuclear weapons, radioactive spills, and/or cosmic radiation.

4. (currently amended) The method of claim ~~1~~ 30 wherein said isoflavone is selected from the group consisting of genistein, genistin, daidzein, daidzin, glycitein, glycitin, biochannin A, formononetin, O-desmethylangolensin, and equol, their glucosides and derivatives, and mixtures thereof.

5. (currently amended) The method of claim ~~1~~ 30 wherein said isoflavone is administered orally, subcutaneously, intramuscularly, intravenously, transdermally, intranasally, or rectally.

6. (original) The method of claim 5 where said isoflavone is administered orally in the form of a capsule, a tablet, an inhaler, a troche, or a food supplement in the form of a food or beverage.

7. (currently amended) The method of claim ~~1~~ 30 wherein said isoflavone is administered chronically.

8. (currently amended) The method of claim ~~1~~ 30 wherein said isoflavone is administered within 2 weeks prior to exposure to radiation, during radiation exposure, and/or within 2 weeks following radiation exposure.

9. (original) The method of claim 8 wherein said isoflavone is administered within 4 days prior to radiation exposure, during radiation exposure, and/or within 4 days following radiation exposure.

10. (withdrawn) A method of treating or preventing damage to living cells, tissues and organs caused by exposure to radiation, said method comprising administering to a therapeutically effective amount of an isoflavone.

11. (withdrawn) The method of claim 10 wherein said radiation is selected from the group consisting of an acute lethal dose of ionizing radiation, an acute sub-lethal dose of ionizing radiation, a chronic low-dose of ionizing radiation, an acute lethal dose of non-ionizing radiation, an acute sub-lethal dose of non-ionizing radiation, and a chronic low-dose of non-ionizing radiation.

12. (withdrawn) The method of claim 11 wherein said radiation is selected from the group consisting of diagnostic X-rays, radiation therapy in cancer treatment, CAT-scans, mammograms, radionuclide scans, interventional radiological procedures under CT or fluoroscopy guidance, tissue-incorporated radionuclides from ingestion of contaminated food or water, and uncontrolled exposure to ionizing radiation from nuclear weapons, radioactive spills, and/or cosmic radiation.

13. (withdrawn) The method of claim 10 wherein said isoflavone is selected from the group consisting of genistein, genistin, daidzein, daidzin, glycitein, glycitin, biochannin A, formononetin, O-desmethylangolensin, and equol, their glucosides and derivatives, and mixtures thereof.

14. (withdrawn) The method of claim 10 wherein said isoflavone is administered chronically.

15. (withdrawn) The method of claim 10 wherein said isoflavone is administered within 2 weeks prior to exposure to radiation, during radiation exposure, and/or within 2 weeks following radiation exposure.

16. (withdrawn) The method of claim 15 wherein said isoflavone is administered within 4 days prior to radiation exposure, during radiation exposure, and/or within 4 days following radiation exposure.

17. (cancelled)

18. (currently amended) The method of claim ~~17~~ 37 wherein said radiation is selected from the group consisting of a lethal dose of ionizing radiation, a sub-lethal dose of ionizing radiation and a chronic low-dose of ionizing radiation.

19. (original) The method of claim 18 wherein said radiation is selected from the group consisting of diagnostic X-rays, radiation therapy in cancer treatment, CAT-scans, mammograms, radionuclide scans, interventional radiological procedures under CT or fluoroscopy guidance, tissue-incorporated radionuclides from ingestion of contaminated food or water, and uncontrolled exposure to ionizing radiation from nuclear weapons, radioactive spills, and/or cosmic radiation.

20. (currently amended) The method of claim ~~17~~ 37 wherein said isoflavone is selected from the group consisting of genistein, genistin, daidzein, daidzin, glycitein, glycitin, biochannin A, formononetin, O-desmethylangolensin, and equol, their glucosides and derivatives, and mixtures thereof.

21. (currently amended) The method of claim ~~17~~ 37 wherein said isoflavone is administered orally, subcutaneously, intramuscularly, intravenously, transdermally, intranasally, or rectally.

22. (original) The method of claim 21 where said isoflavone is administered orally in the form of a capsule, a tablet, an inhaler, a troche, or a food supplement in the form of a food or beverage.

23. (currently amended) The method of claim ~~17~~ 37 wherein said isoflavone is administered chronically.

24. (currently amended) The method of claim ~~17~~ 37 wherein said isoflavone is administered within 2 weeks prior to exposure to radiation, during radiation exposure, and/or within 2 weeks following radiation exposure.

25. (original) The method of claim 24 wherein said isoflavone is administered within 4 days prior to radiation exposure, during radiation exposure, and/or within 4 days following radiation exposure.

26. (withdrawn) A method of treatment or prophylactic treatment of the lethal effects of ionizing radiation throughout the entire body of a mammal exposed to radiation, said method comprising administering to said mammal a therapeutically effective amount of an isoflavone.

27. (withdrawn) The method for increasing survivability of mammals from a lethal dose of radiation as defined in claim 26 wherein said compound is genistein.

28. (withdrawn) A method for increasing survivability of mammals from a lethal dose of radiation as defined in claim 12 wherein said compound is administered to said mammal during the time period of approximately 4 days prior to radiation exposure to approximately 4 days subsequent to said lethal dose of irradiation.

29. (cancelled)

30. (new) A method for the radioprotection of a mammal, comprising the steps of:

a) providing a mammal, a composition including at least one isoflavone, and an ionizing radiation source;

b) administering a therapeutically effective amount of said composition to said mammal; and

c) exposing the entire body of said mammal to ionizing radiation produced by said radiation source, wherein said entire body of said mammal is protected from harmful effects of said ionizing radiation by the administration of said composition in said administering step.

31. (new) The method of claim 30 wherein said isoflavone is genistein.

32. (new) The method of claim 30 wherein said administering step includes administering said composition to normally functioning cells throughout the entire mammal.

33. (new) The method of claim 30 wherein said composition consists essentially of one isoflavone.

34. (new) The method of claim 30 wherein said composition does not include amino acids, carbohydrates, carnitines, nucleocide and tocopherols and or derivatives thereof.

35. (new) The method of claim 30 wherein said composition is administered approximately two weeks prior to exposure to radiation and/or approximately two weeks following radiation exposure.

36. (new) The method of claim 30 wherein said composition is administered approximately four days prior to radiation exposure and/or approximately four days following radiation exposure.

37. (new) A method of radioprotection of a person, comprising the steps of:

a) providing a person, an isoflavone and a radioactive substance;

b) administering a therapeutically effective amount of said isoflavone to said person;

c) exposing the entire body of said mammal to ionizing radiation produced by said radiation produced by said radioactive substance, wherein said entire body of said person is protected from harmful effects of said ionizing radiation by the administration of said isoflavone in said administering step.

38. (new) A method for the radioprotection of a mammal, comprising the steps of:

a) providing a mammal, an isoflavone, and an ionizing radiation source;

b) administering a therapeutically effective amount of said isoflavone to said mammal; and

c) exposing the entire body of said mammal to a lethal dose of ionizing radiation produced by said radiation source wherein said entire body of said mammal is protected from harmful effects of said ionizing radiation by the administration of said isoflavone in said administering step.

39. (new) The method of claim 38 wherein said harmful effects of said ionizing radiation are death of said mammal.